

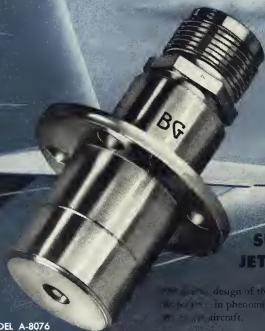
AVIATION WEEK

AUG. 6, 1951

50 CENTS

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Aviation Week

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Number 6

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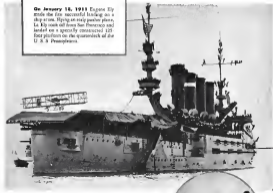
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FIRST LANDING ABOARD SHIP—1911

On January 18, 1911 Eugene Ely made the first successful landing on a ship at sea. Flying on a biplane, he landed on a specially constructed 125-foot platform on the quarterdeck of the U. S. S. Pennsylvania.



Eugene Ely's pioneer landing aboard the U. S. S. Pennsylvania was the beginning of shipboard aviation. Although years were to pass before the U. S. Navy commenced its first actual carrier, the Langley (converted from a collier), Ely's flight marked the dawn of a new era in naval strategy and tactics.

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For information about ideas, ways in which the new G-E Measurements Laboratory helps ensure dependable aircraft instruments, contact your G-E service specialist or write Division 487-25, General Electric Company, Schenectady 5, New York.



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NEWS DIGEST

UAL DC-6Bs Fly

United Air Lines placed its DC-6Bs in operation for the first time last Wednesday after UAL pilots agreed to call off their three-month refusal to fly the bigger, faster transports. The 35-passenger planes initially were placed as extra service on routes to the Pacific Coast, serving Los Angeles, San Francisco, Portland and Seattle-Tacoma, to relieve the heavy demand for space on UAL's regular flight caused by strike of Western Air Lines.

With the planes back in service, the airline has already recovered \$300,000 in revenues which had been canceled July 15 because of equipment shortage when the pilots refused to fly the new jet.

Institution of DC-6B service is expected to put up labor contract talks when they broke off last May 29, when UAL pilots took their strike vote against the airline.

National Mediation Board Representative John F. Murry immediately opened the whole range of pilot-management problems for negotiation. General negotiations for a new UAL contract began two years ago but had broken down repeatedly. The last breakdown came after the ten-day strike that paralyzed the entire airline in June. The pilots had ended their walk-out June 24, but refused to fly for the airline.

DOMESTIC

Shipments of personal airplanes during June totaled 383 units with a value of \$1,241,000, reported by last week's issue, as compared with 332 units shipped the previous month by nine companies. Five shipments included 50 two-place and 115 four-place or more. Cessna aircraft shipped from January to June of this year, as reported by Aircraft Industries Association, totaled 1,419 valued at \$10,418,000.

Pacific states placed all orders and operators for 744,746,184 lbs. of fuel from July 1, 1950, through June 15, 1951, according to Military Air Transport Service. The total includes 100,000,000 lbs. of fuel and 100,000,000 lbs. of fuel for 744,746,184 lbs. of fuel.

Gen. Oscar N. Bradley left week was named for a second term as chairman of the Joint Chiefs of Staff (Aviation Week June 25, p. 10) by President Truman. Bradley's name was forwarded to Congress for confirmation, along with that of Francis P. Winter, nominated by Truman to the post of Undersecretary of the Navy (Aviation Week June 10, p. 8). Gen. Bradley had planned to retire Aug. 15, following completion of his present tour of duty on the JCS, but was asked to remain by 100 members of the House for an other term to maintain stability in JCS military planning during the present rearmament crisis.

FINANCIAL

Republic Aviation Corp. reports a net income of \$1,749,512 for the first half of 1951 after provision for taxes. Sales for the period totaled \$52,281,001. Earnings were reported as over \$500 million.

North American Aviation, Inc. has reported a net income of \$4,438,000 after taxes, or preliminary unaudited figures, for the period between Oct. 1, 1950, and June 30, 1951, first nine months of its fiscal year. Sales and other income for the period were \$110,797,790. Earnings before taxes for the period were \$10,207,542.

Aviation Corp. reports sales for the nine months ended June 30 of \$9,901,000, with net income of \$68,724 after taxes and provision for preferred dividends, but not including provision for reorganization. The board has declared a fourth quarterly dividend of five cents per share payable Aug. 15 to holders of record on Aug. 1.

Fairchild Engine & Airplane Corporation has declared a dividend of 30 cents per share payable on Sept. 5 to holders of record on Aug. 15.

INTERNATIONAL

Canadian Wright Ltd., Montreal has received a \$17 million order to modify and repair 100 Republic F-84F fighters for the RCAF over a four-year period. Standard Aero Engine Ltd., Winnipeg, was awarded a \$2 million order for aircraft engine repairs.

Avro 767A delivery-research plane has made its first flight. The 767A delivery from the previous 767B in that it has an air intake for the turbo-propeller engine located in the fuselage, not at the wing roots, and the 767B has the intake located at the wing roots.

British European Airways Corp. had between 50 and 50 flights (uninterrupted) last month when members of the Army of Supervisors Staff, Engineers and Technicians received a wage offer made by BEA and BOAC. Following negotiation, an agreement was reached and service resumed.

for faster construction of faster planes

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SIDELIGHTS

Making It Legal?

Some Washington observers expect Civil Atmospheric Board action soon on the applications of Transconair and Seaboard & Western for certification as overwater flight carriers.

[illegible]

Air Power Build-Up

There is general agreement in Washington that a buildup in air power seems inevitable in the next few years. But military leaders are far from agreement on what kind it will be.

Despite pomp to the contrary, many Navy people agree that the next Chief of Naval Operations, wherever he is, will adhere to the policy advanced by Adm. Silverman against a substantially larger Air Force response: one: Naval restraints.

Published estimates of a 1959 Air Force cut the cost of such an air force at about \$15 billion in 1953 and indicate it cannot possibly be achieved by now and 1953 without a radical shift in mobilization. In addition, this would mean a \$60-billion defense budget next year instead of the proposed \$55.595.

Air Force

Edward J. Dickinson, 46, has been named Deputy for Infrastructure. Former captain and member of OSS, he will be responsible for engineering development of the USAF air base structure both in the U. S. and abroad. The current air base program is presented in Congress reviews a \$3-billion expenditure on approximately 740 air bases throughout the world. Harold C. Street, Oklahoma City lawyer and former Assistant Secretary of Air Force, has been nominated to be president of Air Force Area, and Thomas G. Lupton, assistant to the president of Consolidated-Vultair and former

(Continued on page 44)



BELL X-3 TURNED—With its wings in the full forward position, the variable-sweep Bell X-3 aircraft plane returns to Muroc AFB after a successful flight test. Close study of the photo indicates that the X-3's wings move forward along the fuselage as the sweep is raised. Foreground is a single Albion B-37-A-17 noted at 6,500 ft. on 20 June.

Aviation News Picture Highlights



VISIBILITY

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above the horizon — it's EICOR's electronically team supplying the safe, sure, AC power your need-plus timing system needs for perfect flight systems under all flying conditions, beyond the horizon — across the dynamic EICOR team provides the difference in clearly controlled alternating current, the power necessary to give vision to the forward-looking, forward-looking eye of your aircraft's engine and its electronic equipment. You can be assured of the EICOR's ability to meet your needs. Designed to light and control all flight systems, the EICOR AC Alternator and EICOR Regulator have proven their dependability of performance over thousands of operations flying hours. The EICOR AC Alternator will generate 115/100 watts, three phase, or 115 volts, single phase, at frequencies of 200-1000 cycles and over a speed range of 1200-3600 rpm. Sensitive voltage regulation will hold turbine for the alternator if supplied by its own means, the EICOR electronic Regulator. This EICOR Regulator can also be used in any power circuit, for protection supply, having a range of 100-1000 volts AC of 6.3 to 50 amperes DC and 14.4 to 1000 watts DC.



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for aircraft power conversion equipment

WHO'S WHERE

In the Front Office

John Robinson, formerly chief, president in charge of EICOR (David D. Robinson) is now president and technical department at EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois. He was formerly president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

Raymond B. Gordon has been designated vice president and manager of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois. He was formerly president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

Carl J. Griffith has been appointed assistant to the president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois. He was formerly president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

What They're Doing

Myron B. Gordon, formerly vice president and manager of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois. He was formerly president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

William B. Young has been designated vice president, secretary, treasurer and member of the board of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

John E. Dowling, former president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois. He was formerly president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

Changes

Charles L. Martin has been appointed vice president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois. He was formerly president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

G. D. Farnes, Jr., former president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois. He was formerly president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

Edward E. Mays has been appointed vice president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois. He was formerly president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

George E. Smith has been appointed manager of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois. He was formerly president of EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

Violet Corrigan has been designated flight system supervisor in charge of all power and electronic for EICOR, Inc., 1801 West Congress Street, Chicago 7, Illinois.

INDUSTRY OBSERVER

► First twin compressor U.S. turboprop of the production line will be the Pratt & Whitney J55, according to present schedules. Curtiss-Wright Corp. is testing the British Bristol Gyron which is also a dual compressor configuration, and is likely to put it into production. Dual compressors would introduce greater weight, but this could be offset by low drag afforded by the engine's reduced fan compression.

► British jet engine manufacturers are tiring of the assignment of overhauling their own engines for British airlines during the flight testing period of the new British jet transports. It has been planned that way to give the design engineers and the production specialists a chance to see how the compressors hold up in service and to catch any bugs or weaknesses that it is doubtful if the overhaul process will be continuous by the manufacturers after the testing. Overhaul will then probably be taken over by the British airlines, according to their practice with piston engines.

► Now that Glenn L. Martin Co. is getting some flight experience with the English Electric Canberra, which is in service in this country in the B-57A intruder plane, and with flight experience with the Canberra, which is in service in this country in the B-57A intruder plane, getting out. It is said that the XB-51 is somewhere around 100 mph faster than the Canberra.

► Experimental flight research with new British jet transports indicates stress put loads encountered occasionally at higher speeds are giving the engine designers some concern. Two alternatives, neither desirable, are being considered: To beef up the airframe further to take the loads at the higher speeds or to slow down on incidence of turbulence.

► Both XB-52 eight-jet bombers under construction at Boeing's Seattle plant are in final assembly stage and all major components are installed except engines. Pratt & Whitney J57 engines will be delivered in sufficient quantity to enable the company to run engine tests and to make at least one of the bombers flyable by the end of the year (AVIATION WEEK July 30, p. 16). Engine delivery is expected to delay flight date of the second XB-52 about three months.

► All Force has completely abandoned the idea of turboprop engine installation for medium altitude fighter aircraft in favor of the turboprop. It holds to the idea that the turboprop engine is better able to defend itself in the air.

► Fuel efficiency of the turboprop engine is still much lower than that of the turboprop. USAF research personnel report, however, that the gap is rapidly closing because of the great emphasis being placed on turboprop development, and that "practically all difficulties can be expected to be solved between the two engine types."

► Renewed USAF interest is developing in McDonnell Aircraft's XF-88 as a fighter-bomber. New emphasis being placed on Army's tactical aviation needs is said to be behind this move. Army is said to be considering USAF more than a year ago that it thought the XF-88 powered by two Westinghouse J-34 3,000-hp thrust jet engines the best answer to its needs for a tactical support fighter response. Army said the plane high on its extraordinary range characteristics and its capabilities as an aerial warfare platform.

► Decision by Pratt & Whitney Aircraft not to accept more orders for the commercial B-550 engine is being an equally serious military decision (the engine will power a new Boeing two-engine advanced trainer) and already keeps commercial order shunting commercial production slowly through June 1955 (AVIATION WEEK July 30, p. 7). Management will take another look later to see if it can resume deliveries in the second half of 1955. Meanwhile, the cut-off will affect shipment of future orders for three of the current U.S. transports—Douglas DC-5, Convair 440 and Martin 4-0-4—all of which are the powerplant. It would mean pushing these planes into turboprop conversion sooner than had been expected, if commercial deliveries of turboprops can be made available.

Time for Decision

The Administration has cooled down last October as the date for decisions on the future of the defense buildup. That's the effect: word that has been passed on to congressional leaders. Administration just now isn't in a rush to decide on defense. Slow down or stop? It wants to get its bearings in the aftermath of the defense act two months before deciding.

The new and all-important factor: Russia's aggressive world role, propaganda offensive among potential workforces between U.S. and USSR.

A long-term study of U.S. and USSR, including Alexander Trakhtenberg, former Russian ambassador to the U.S., has unexpectedly emerged from obscurity to take part in the Soviet's new publicity strategy.

It took the U.S. Administration to the spot.

• If Administration leaders talk peace, what is left of the spirit of agency in the "emergency" program on the front lines may tend to evaporate.

• If their talk "emergency" and "war threat" and back at top with approval of the present program on the same point prepared by the services—building a billion of the USAF goal from 95 to 135, 180 or 175 wings and a boosting of the goal for Navy's striking air force from 15 to 18 or 20 carrier groups, it will be hardly effective to convey U.S. peaceful intent to the rest of the world.

Railroads: Friend of Nonskeds?

Nonskeds have a powerful Mac of friends: the railroads. Postmaster for Railway Program is four square to lead the nonskeds down to.

• Put mail pay to the railroad unions as a strict cost-of-labor factor. (Association of American Railroads, the other railroad association, also backs this.)

• Let the Post Office have half as an alternative to new, increasing payments by railroads, if it can't.

• FIP Vice President Robert Donahue's comment to Senate Commerce Committee on the nonskeds: They "represent the finest spirit of American free enterprise."

These railroads, which stand to their own feet. They are no longer of the public. They are producing an important means to a public and selling it for cash in spite of constant harassment from recent attempts which costed \$100,000,000.

• Let the nonskeds and the railroads be seen to part.

• Nonskeds plan to open a new for direct government subsidy grants. In legislation reporting mail pay have already, they want government making that as well as the railroad line, despite the direct grants in the "emergency" and "national defense" programs. Both railroad associations want all an administration eliminated.

• The rail associations are pressing the push to cut off government funds for reports and current programs. The world for the nonskeds and railroad lines.

Airmail Separation

Proposed new in that Senate Interstate and Foreign Commerce Committee will recommend legislation separating airmail pay from other mail pay.

• Set separate mail pay rates for all domestic services to be effective until CAB designs them. CAB and airlines oppose this, claiming it is "arbitrary." But senators like CAB's position that it will have this worked out for

all domestic routes by the end of September with a grant of aid.

• Double carriers into five groups, with rates ranging from 95 cents a ton mile for the Big Four up to \$1.15 a ton mile for the local lines.

• Express Post Office to dispatch mail expeditiously and bar it from having larger carriers because of lower and later. Middle-class carriers, with more profitable Big Four routes, provided that they have higher mail rates, the Post Office will channel all its business into the Big Four.

• Set the Universal Postal Union rate as the "insurance" for international carriers. It is now \$2.50 a ton mile for first class mail, probably will be lowered slightly at UPU conference in Brussels that ILL TAA urged that the UPU rate be "the" rate, Northwest and Round worried it be the "insurance" rate.

• Make public all direct subsidies to air carriers. International carriers want this kept "secretive"—made well able to the commission of Congress, but not the public. They object that disclosure will make them the butt of criticism by foreign competitors on the grounds of being government-owned.

Aluminum Hoarding

Senators' Small Business Committee plans to hold hearings in a few weeks on alleged hoarding of aluminum by big scrap companies.

Committee investigation has been in California gathering data.

The investigation has been sparked by complaints of small concerns that they are being business for lack of aluminum supply while scrap companies are "hoarding" stocks of aluminum because they won't have need of it for months to come.

Army: Land-Bound by USAF?

Defense Mobilization Charles Wilson greatly agrees that Army is going all out to make itself airborne. It has

• A few spot landings that weigh less than 2.5 tons. World War II production.

• New emergency need to replace the shovel, pickaxe, tank, and so on of World War II, that weighs less than 2.5 tons.

• Airborne-vehicle, however, offering greater protection and weighing 500 lbs. less than the old ones.

• Tropical combat boots that weigh 1.5 lbs. less.

• New kit that weighs about a pound less.

Army is now working along on lighter rifles, pistols, machine guns, and ammunition.

New Plants

The Administration's plan to build and operate defense plants in eight Congress toward it. But Defense Mobilization Charles Wilson adds two variables to its government expansion and industry in making private and government-owned plants.

Wilson noted the authority to build new plants primarily to expand electronics manufacturing capacity. It would be an "in case" that new private companies in constant in defense production.

Defense leaders anticipate electronics shortages will become an increasingly acute bottleneck in the defense program over the next year.

—Katherine Johnson

Results of the Pilots—I

ALPA Switch May Aid Airline Relations

New leadership to have same policy, smoother methods.

By William Knicker

Airline management is due for a development if it expects a change in the bargaining demands of the Air Line Pilots Assn. as a result of the outgoing last month at President David L. Beltsche.

The pilots' revolt that overthrew the founder and 10-year president of three years is not cut to the pattern that usually guides a sudden and unexpected change in leadership of a labor union in the small circumstances, a change in constant demands follows.

The union will find there has been no change in the Air Line Pilots Assn. and what does it mean?

The airline industry and organized labor in the same standing last question are not sure, and not fully meaning when David L. Beltsche found he had been "ousted" from his presidency of the union. For seven years, Beltsche was a pilot, and he had been in the industry for 10 years.

• Same Time. New Senate-Management will have the same office from ALPA, but the celebration will be new.

ALPA will say any of change in the Air Line Pilots Assn. (which are labeled "Airline Industry" and "Labor") in the same manner of order, from what the airline will find different in the manner and the persistence of the union in trying to attain their objectives.

• New Time. The union will find the paradox to achieve their will to new to new membership of the new ALPA leadership a successful in its initial organization. The members are waiting the extension for the referendum. They intend to have a definite policy which they say they don't have under Beltsche.

The question is whether this makes them a closer of new organization. The members are waiting the extension for the referendum. They intend to have a definite policy which they say they don't have under Beltsche.

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IN HAPPY DAYS David L. Beltsche sits down at the table with Clarence N. Hayes, former chief of the American Airlines company, board meetings. Beltsche then at Henry Wynn, some attorney in the case. Left is AA pilot Fred Beltsche.

Special Report

What's behind the change in leadership of the Air Line Pilots Assn. and what does it mean? The airline industry and organized labor in the same standing last question are not sure, and not fully meaning when David L. Beltsche found he had been "ousted" from his presidency of the union. For seven years, Beltsche was a pilot, and he had been in the industry for 10 years.

• Same Time. New Senate-Management will have the same office from ALPA, but the celebration will be new.

ALPA will say any of change in the Air Line Pilots Assn. (which are labeled "Airline Industry" and "Labor") in the same manner of order, from what the airline will find different in the manner and the persistence of the union in trying to attain their objectives.

• New Time. The union will find the paradox to achieve their will to new to new membership of the new ALPA leadership a successful in its initial organization. The members are waiting the extension for the referendum. They intend to have a definite policy which they say they don't have under Beltsche.

The question is whether this makes them a closer of new organization. The members are waiting the extension for the referendum. They intend to have a definite policy which they say they don't have under Beltsche.

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FINANCIAL

Forced Sales as Money-Makers

W. R. Grace's profitable experience in divestment of NAL and Eastern shares is matched by other firms.

Forced sale of airline stock holdings by direct or indirect compulsion has thus far proved to be a profitable procedure for the divesting groups. The latest example is afforded in the recent sale by W. R. Grace & Co. of its former holdings of National Airlines stock. At present, W. R. Grace & Co. is in a bitter struggle to direct entry to the United States via an interchange with National for Pan American Great (Panagra) which it once jointly with Pan American World Airways. Pan American is opposing and is prepared to have provided the Civil Aeronautics Board to initiate an investigation of W. R. Grace & Co.'s holdings of National Airlines stock. Apparently to avoid a showdown on this inquiry, W. R. Grace has sold its National stock but it has been profitable for the Grace interests to do so.

► **The Revenue-Is Mischief, 1949,** when National was experiencing times and difficulties, W. R. Grace & Co. bought 174,000 shares, or 17.4 percent, of the airline's stock at \$5.10 per share. Additional 172,000 shares were placed under option to the same group. Soon thereafter, National offered to sell 140,000 shares to Pan American at about the same price. The proposed additional sale was contingent upon an equipment interchange agreement between Pan American, Panagra and National at the New York and Miami gateways. Early this year, National recommended the equipment interchange proposal and in the process the stock options were treaded as well.

In the meantime, new arguments among all interested parties in the Miami gateway was being opposed.

In selling its National Airlines stock after about two and a half years ownership, W. R. Grace & Co. is estimated to have realized a capital gain of better than 170%. In other words, an original investment of about \$919,008 resulted in a capital gain profit of about \$1,675,008.

Early in 1949, when the Grace interests acquired their National holdings, to avoid working at even purposes they sold 70,000 shares of Eastern to complete liquidation of their use to that 10% share interest in that airline. This sale, too, was accompanied by a substantial profit, estimated to represent at least about a 20% capital gain on

an original investment of around \$469,000.

It would be unusual if W. R. Grace & Co. now found it desirable to become an investor once again in Eastern if subsequent equipment interchange arrangements concerning Panagra make such a consideration desirable. ► **PAA Divestment—Pan American** too has benefited by a divestment made necessary in another direction. During 1945, the Chinese Nationalist Government declared a policy of greater ownership and control of its airline in which Pan American then held a 45% interest. Pan American sold its entire interest in the old China National Aviation Corp. for a total profit of \$4,811,101. At the same time, it invested \$1,675,177 for a 20% interest in the new China National Aviation Corp.

With the growth of the Government in 1949, Pan American sold its 20% participation in CNAC at a 21% loss, realizing \$1,250,000. This loss of about \$425,000 was almost totally paid by the 1945 profit on the sale of the Chinese interest in 1945.

► **Shamefully Profound—CAR** policy has consistently discouraged reselling interests in controlled shares by stockpiling interests. This was largely responsible for the sale by American Express of its majority interest in Aerolineas Especiales (later American Overseas Airlines) to American Airlines in July, 1949.

While American Express was forced to move out of a dominating position in the trans-Atlantic air field, a fall in its worldwide profit to itself. At Dec. 31, 1949, American Express showed its holdings of 176,800 shares of American Express Airlines stock at a valuation of \$1,875,123. It sold 120,000 of these shares to American Airlines for \$5 million in cash, realizing \$6,925,000, or about 24%, of the excess in carrier's stock. American Express's holdings were subsequently increased to 518,508 shares through a three-for-one stock split in July, 1949, plus the purchase of 107,705 additional shares at \$12 a share after the stock split.

The total realized shares were valued at American Express's books at \$1,687,484. When AEA was sold to Pan American, a capital gain of some \$944,000 was realized in the process by American Express. In other words, this

realized of AEA realized a capital profit of at least \$3,994,000, or about 200% on an original investment of \$1,994,123. But this was not all. In 1939, when American Express owned 100% of American Export Airlines, it distributed to its shareholders as a stock dividend 50% of its entire holdings. This distribution must be added in the overall computation of the gain realized by the airline venture.

► **Aerco's Experience—Probably the most profitable forced divestment belongs to the Aviation Corp. (now Aero Industries Corp.).** In October, 1945, CAB ordered the holding company to sell down to at least 4% in their 22% interest in American Airlines common stock. This order could not have been issued at a more opportune time, it benefited the Aviation Corp. In October, 1946, 211,000 shares of the old stock were sold at what now appears to have been near peak prices, for a profit, before taxes, of almost \$17 million, or almost investors-fold on an investment owned as the basis for slightly more than \$1 million. This left the holding company with 257,000 shares of American (after the five-for-one split) which it sold on June, 1951, at a gain profit of more than \$3.5 million on an investment last caused on its books at \$352,123.

In recent years, Aerco also liquidated its aviation investments in Pan American, Roosevelt Field, and Comair. While these sales, on balance were very profitable, they were largely done on the secondary basis. Moreover, the degree of profit obtained in their disposal does not approach that realized in the American Airlines transactions.

► **Mattson Loss—Not all airline divestments as consequences by other business portfolios events have been profitable.** For example, for many years the Mattson Navigation Company, a private ship-ship operator on the Pacific with a heavy net worth in excess of \$85 million, has attempted to become a factor in air transportation in that area. After repeated attempts for a time Pacific Northwest, the Mattson decided to liquidate its aviation operations at a substantial loss after making an original investment of over \$5 million.

The Waterson Steamship Corp., in July 1945, filed an application with its office, Waterson Airlines, Inc., or organized in 1940, for a certificate to operate between New Orleans and San Francisco. Despite an earlier investment of about \$1.5 million, the plan of action was dropped by CAB. Frustrated in its desire to obtain a position in air transportation, Waterson subsequently secured a majority interest in TACA. Its investment in this line is known to have amounted \$2 million, with no profits, but heavy deficits thus far.

—Schlag Alchod



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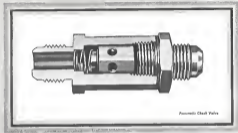
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'Bug-Hunting' on the Avro Orenda Jet

Perfecting a 'simple' modern turbine engine has its headaches.

In the past four years there has been a constant progression of new tariffist equilibria that this has been coupled with a lack of disclosure of surplus debt and development difficulties.

Probably the most candid evaluation of development problems was a session at Engage was given recently for A. V. Roe Canada Ltd.'s *Drumby* by D. W. Kowalski, the company's Glat Furbush division chief development engineer. Before the recent nine annual meeting of the American Society of Mechanical Engineers, at Toronto. The discussion highlights the headaches involved in launching out "boys and leopards" a "simple" jet to a high stage of perfection.

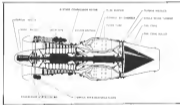
The Orinda, officially rated "an engine of 6,000 lb thrust" (but probably putting out at least 7,000 lb), now is being marketed as Avia's □ 100 all-weather fighter, and also is slated for Canadian Ltd's version of the Sabre.

It is an oval flow unit incorporating 10 compression stages, 6 stage turbine cans and a single turbine wheel. Nominal diameter is 42 in., length about 10 ft., dry weight approximately 2,900 lb. Specific fuel consumption is about 1 lb./hr./hp.

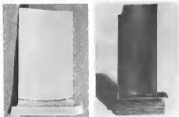
► **Compress Details**—Turbine stages of the compressor rotor are covered in aluminum alloy disks, while fourth stage disk is steel. First three stages of blades are fit into disks, dovetail fittings being used for the others. The first three and the fourth blade stages are steel, others are aluminum alloy. A stepped sealing ring projecting from the rear of the fourth stage disk, acts as a guide as the rotor casing passes a small amount of air to cool the turbine disk's rear face. Front face is cooled by fifth stage air.

Stator blades are dovetailed in ring retained by lips on endstage spacer bolted to the casing. Discs in below from the second, fifth and eighth stages.

• **Center, Case, Turbine-Case:** The two halves between the diffusers and the compressor bearing assembly, which contain the rotor shaft and absorb its thrust. The bearing supports two disks separated by spacer rings which prevent the two disks from the load. The bearing housing is spherically guided on its outer diameter to accommodate wide shaft misalignment.



AIRCO CANADA CRUSHERS, largest second-hand stock, full line direct



misalignment in servomotors. The bearing housing is spring loaded against a rubber thrust ring, which deforms slightly with misalignment but maintains the axial position of the rotor.

The 10,000 are arranged around a light alloy casting—fin, hub, boot—which joins the center tubing and the turbine stator box. The system consists of a small duct absorbing noise and spinning air is mounted on top of the casing. The tubes and absorbing material are used on the diffuser duct pipe project with the case.

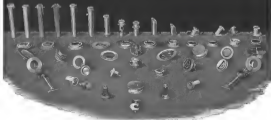
The nozzle bore covers the tubular nozzle blades and the transition duct from the case. Attached to the bore is the shroud ring surrounding the fan.

base blades. As in conventional applications, the surface shell has an integral shaft which carries the turbine bearing (rotated by screw drive) and is mounted to the compressor shaft through a splined coupling near the motor bearing. The *microturbomachinery* also, surface blades have a free flame

► **Fuel Control, Lubrication—Throttle** is connected to an altitude-sensitive scheduling-type flow control which varies the delivery of two engine-draw passages through a servo system to maintain engine speed constant for any throttle setting regardless of altitude. Pumps have integral overspeed govern-

Old pump supplies to be no more than

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used to steel ends and this cleared the trouble.

► **Failure: Blade Cracks**—Kramlich reports that, as originally designed, the rubber blade had a feather edge to prevent airman damage in case of tip rips which might occur because of the small dimensions used. A survey of the mold patterns of the vibration modes in the running range showed that the second principal mode had an area of high bending stress extending to the tip.

Cracks started in the first feather edge and were propagated along the line of high stress. As the behavior of the blade showed ring under operating conditions was established, it was possible to employ satisfactory tip clearances without danger of rips.

Since the need for the feather edge had disappeared, it was eliminated to strengthen the blade tip. This proved an effective remedy.

► **Stage Seal Rubbing**—As more running hours were accumulated, further difficulties began to crop up. Almost all engines were inclined to heavy rubbing of the fifth stage peripheral seal, with complete loss of its effectiveness.

This was believed to happen as running down from high speeds when the pressure behind the tenth stage disk decreased rapidly but a high pressure could remain momentarily between the tenth and ninth disks, forcing the latter to rise and the dropped trailing ring to lock its gland. The intervening cavity was vented through the tenth stage disk and this caused the trouble.

► **Thrust Ring Difficulty**—Considerable work was involved in the development of the flexible thrust ring of the center bearing assembly, incorporated to look after regular misalignment resulting from slight misalignments.

An ingeniously designed the rings were of soft rubber with drilled steel corner braces. They yielded considerably from extremes of the rubber toward the edges of the corner braces, though the slots in the corner braces and from the unbraced corners.

The resulting collapse of the ring permitted the compressor to move forward and find the static assembly. This was judiciously avoided by placing a step of tape between the corner brace and the rubber. A further variation consisted of bending the ring with a wire tie. But it was difficult to exert the ring to the required dimensions over similar portions, because the tape had sag tended to make the ring oval after casing. Under operating conditions the ring would assume the rectangular shape intended with reduction of its oval dimensions and compressor fueling would still occur.

The problem was finally solved by using a composite ring, with a hard inner core and soft outer housing.

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"The fact we have to face today is that steel mills are operating on a hand-to-mouth basis as far as scrap is concerned. Some mills are working on only a two-day supply of scrap. We already have had to shut down steel-making furnaces for lack of scrap.

"That's why we are asking you to strain every effort to get more scrap out of your plants and yards and on its way to the mills . . . to search out the scrap that doesn't come to market in normal times. You'll find this "damaged" scrap in obsolete equipment, tools and machinery that you haven't used for years . . . overlooked in your storage sheds . . . or rotting away in a junk pile in some forgotten corner. It's there. Turn it in at once—so we can have out the steel you need. We can't do it without your help."



UNITED STATES STEEL

J. Edgar Hoover

President, United States Steel Corporation

1-4786

were then redesigned, using solid aluminum grommets to get a better velocity distribution. This improved the mixing of the front and back stages considerably. Consequently, the acoustical characteristics were improved greatly.

The original design had a splitter race located in the diffuser, to separate the velocity distribution to the combustor case. It is known that a poor velocity profile can lead to unusual loading in case. Considerable difficulty was experienced in designing an acoustically acceptable splitter which did not impose too much of a pressure loss on the air stream. Hence, this feature was discarded. Although some combustion chambers have failed from loading, it was only after very long periods of operation, and this is not considered to be a limitation on the engine.

Windshields Studied To Analyze Failures

Laminated windshields are coming in for close study at the Human Institute of Technology's Aeronautics Research Foundation.

As part of the investigation, sponsored by the Air Research and Development Board, is to perfect an electroviscous, swirling, delay-type wind screen coupled with an efficient acoustic lag mounted in aircraft. Out of the research will come specifications for the design of windshield-reinforced and bulletproof-for military planes. The foundation has completed data on conditions in which a windshield will be subjected in dry air, clouds, and on the ground in subsonic test conditions, and it has conducted detailed studies and lab tests for stress analysis.

In one test, done at -90F was run over one side of the screen, while test was applied gradually to the other side until leakage, to determine effect of temperature differences.

Physical properties of the glass and the bonding plastic also have been evaluated.

Researchers also found that cold cracking while on the ground may cause the glass to fail. At present, happens from the bonding plastic (polyurethane) is elastic, hence a good look for the more brittle glass. But at low temperatures, the material too tough and stiffens and may crack the glass.

Another problem is created when the cold, outer mounting of the windshield does not heat, making a hot spot in the center of the pane. This condition may also cause failure. Having the present may be a solution to this problem.

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DRYDOCK MODEL has two and aft control station for steering vertical floats to



FLYING BOAT YEERN, Fowatelli catamaran can support plane underway before



BEACHING GEAR chucks up or down, tending on bicycle caterpillar tracks to



UNLOADING PLATFORM onto which plane is transferred. Beaching gear then hauls off.

Boat Beacher

Self-propelled Edo gear goes after flying boat and brings it to shore.

A new solution to the problem of beaching a large flying boat has been designed and developed for the United States Navy by the Edo Corp., College Point, L. I., N. Y.

The new gear, designated Model 146, looks like something off the front cover of a science-fiction magazine. It is amphibious and self-propelled, with huge pneumatic cushions and transparent or translucent control bladders breaking the angular lines and planes of the structure.

Model 146 was developed as the result of research on simplifying the beaching of large flying boats. This research indicated that a new kind of beaching gear was needed—a gear which would be usable without prepared ramps, without special structure in the place, and which would involve minimum time and manpower.

►Floating Drydock-Model 146 consists of two vertical flotation units spaced far enough apart to accommodate the hull of a large flying boat. Between these units is a horizontal platform with a movable pulley with adjustable rollers on which the hull flotation rests.

The beaching gear is propelled by two engines of 150 hp each. These drive two propellers, located one at each end of a diagonal across the flotation units. Props are adjustable through 180 deg., which permits proceeding in any direction or turning on the spot at the end.

Two control stations are provided, one located at the rear of a diagonal, other will operate the unit without the other.

►Model Tests-Proposed development has proceeded to the point where a cat-tank test model has been built and tested in the towing basin of the Stevens Institute of Technology, Hoboken, N. J. These tests have included many simulated contacts with a scale model of the Carrier PIV flying boat, as well as general hydrodynamic tests of the beaching gear.

These scale model runs were used to develop the beaching procedure, because the model of the gear was powered and could be remotely controlled.

In picking up a flying boat, the beaching gear is first partially submerged by flooding parts of the floats. Then the operator of the gear approaches from the stern of the flying boat and positions the

(Continued on p. 37)



AS A CLEAR DEMONSTRATION of the extra safety offered by the new Aero Commander, a standard model recently flew non-stop from Oklahoma City to Washington, D. C. with one propeller removed. Over and above such proven dependability, this luxurious executive type plane also offers smooth, quiet operation and high performance. It can easily be adapted for cargo or remote service, equipped for land, snow, or water.

A MULTITUDE OF RIGOROUS FLIGHT TESTS have proven the extra dependability of Lycoming engines under the toughest operating conditions. The two Lycoming GO-435-C2 engines in the Aero Commander are equipped with gear reduction—the same as that used in big commercial planes. The result is greater engine and propeller efficiency, making possible longer, more comfortable flights at lower cost. You can be sure of your plane when it's—

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The BATH machine provides the 14 essentials of a UNIVERSAL Contour Former. It is the only machine that can form virtually all the shapes that will be required in future aircraft design.

Hundreds of shapes, with compound curves and varying radii in many planes, are being formed on BATH exclusively because no other machine can produce them. Read the 14 essentials listed below and you too will choose BATH — for only BATH provides them all.

TYPICAL DIE SET-UPS



Tool arrangement for "Extrusion" work on "The BATH Universal Contour Former"



Tool arrangement for "Skin" work on "The BATH Universal Contour Former"



Typical die setup for stretch forming



Typical compression forming set-up



Showing selected stretch-forming after shearing and heat treating at BATH. Full 180° reverse stretch is created by both air and roller cylinders



Aluminum gun turret rings accurately formed to complete circle



Large corrugated aluminum sheets accurately formed on the BATH machine



Stretching the longest stretching principle and a light section at BATH. Same machine will handle from 1,000-lb. to 150,000-lb. pull



Left: These aluminum nose radials and skin sections are stretch formed on the BATH Contour Former. Extending table construction permits forming sheets with most any combination of curves



Stretching aluminum "Z" extrusion being formed in both horizontal and vertical curves



Aluminum jet engine rings, exhaust cones, flame tubes, diffusers and casings are formed in either full circles or segments



Showing how full circles and spirals are formed on BATH machines

Only BATH Provides ALL These Features

1. **Stretch and compress forming on one machine.** Two-way acting cylinders and reversible table allows choice of forming method best suited to part.
2. **Either sheets or extrusions are formed on the same machine.** Jaw members are movable and adjustable to any cross section.
3. **Tangential, progressive, line-by-line, forming** on a rotating table permits small capacity machine to do the work of a heavier one.
4. **Heavy sections and parts that cannot be stretched**, may be **wipe or roll formed**.
5. **Full circles or spirals are formed in one setting** for most any alloy.
6. **Long parts up to 25 feet or more**, can be stretch-formed without re-setting jaws or dies.
7. **Designed to stretch-form reverse bends** without reheating finished material.
8. **Concentrated application of full forceage over small area** so a fine piece will regularly change to extrusions while contours are being formed.
9. **Peel Set-Up:** Die is mounted on table and stretch heads, wipe shoe or roll assembly, can then be easily adjusted to height desired.
10. **Revers or Rolls in Two Planes:** Produce parts with both horizontal and vertical curves simultaneously.
11. **Material can be twisted while being formed** in varying horizontal and vertical curves simultaneously.
12. **Safety:** Over 10 years of operation have resulted in no known accident to an operator. Machine damage is prevented by shear pins at critical points.
13. **Built to Machine Tool Standards:** Deep sections, eliminating machine deflection, compare against precise part duplication.
14. **Faster production per hour with very low scrap loss**, rarely running 1%.

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Controlled a Military Air Transport Service Boeing Stratofreighter from which wreckage of Pittsburgh Safety Glass gives clues, manufacturers.

On Boeing's "quadruple-threat" Stratofreighter

Safety Glass ... BY PITTSBURGH

Boeing's big C-97A Stratofreighter... transport... of the Air Force B-24 strategic bomber... and the airline Stratofreighter... has demonstrated convincingly its versatility in Korean War service.

As a personnel carrier, the Stratofreighter carries 130 fully equipped medical cots... at a flying ambulance... it can carry up to 70 litter patients with their medical attendants and supplies... and heavy equipment. In transport, it can load a maximum of 20,000 pounds of freight. Recently it received an additional role as an aerial tanker.

The seven-foot windshield in the nose of the Stratofreighter is Safety Glass by Pittsburgh. They give the crew excellent vision through large

glass areas—free from distortion and having an unusually fine optical condition.

The research facilities, manufacturing equipment and practical know-how of Pittsburgh Plate Glass Company have played an important role in developing most of today's military and commercial aircraft. Strong your problems in solving Safety Glass and aircraft glazing methods to us, we'll give you a complete, clear full answer. Pittsburgh Plate Glass Company, Room 3333 E. Grant St., Pittsburgh 13, Pennsylvania.



In recent months the Boeing C-97A Stratofreighter has established itself as the workhorse of the Pacific war in after making striking wounded from Japan to San Antonio, Tex., with a single stop in Hawaii.



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

(Continued from p. 37)
gear under the main part of the hull. It is held in this by steel postures painted on the hull.

To prevent any damage to gear or boat perimeter bumpers are installed at all contact points. Four sloping guide pads keep the hull centered between the float side two large, low-friction perimeter cushions are raised from each float to bear against the underside of the wing. These prevent relative motion between the heaving gear and the strong hull while the flooded compartments are pumped out.

Water to land—Under its own power, the heaving gear proceeds toward shore. Near the beach, the aquatic buoyancy power from the water propellers to three caterpillar tracks mounted in the center of a triple landing gear is used. These tracks are capable of operating over average sandy beaches.

Over exposed, the gear goes to an unloading platform to which the rubber and wing float can be transferred. The operation is done by a tractor or winch which draws the wheeled raft from the gear to the platform. The heaving gear can then proceed to the water again to land out more floating loads.

Heaving gear and pallet have built in provisions for handling ropes and ground anchoring. The pads of the pads are separated and can be quickly adjusted to serve jacks to fit any hull. Thus several of these pads may be dropped to allow access to the bottom of the hull.

More Skyrocket Details Revealed

The Douglas D-558-2 Skyrocket, in which plane, which recently cleared the world's speed and altitude records for piloted planes, made the transition into the supersonic region very smoothly, but there was noticeable fuel flowing in its main tank, and, test pilot Bill Rodgers dated following his recent record-breaking flight (Aviation Week July 34, p. 14).

Skyrocket still shows the exact altitude attained by the Navy experiment speed star, but it was actually "over 85,000 ft." At no time has the plane been flown higher than the absolute ceiling record (72,794 795 ft.) set by U. S. Army Air Corps' Capt. David A. Anderson and Albert W. Stevens in 1955.

Rodgers was dropped from beneath the Navy Boeing D-558 (B-29) at an altitude of about 75,000 ft., fell about 1,500 ft. before igniting the first stages of the Reaction Motors rocket motor, then began his steep ascent.

Somehow above 60,000 ft., and about 30,000 ft. from Marine AFB, he pushed the plane over to begin his

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Photo Courtesy Lockheed Aircraft Corp.

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direct back to the base. During the "pushover," blood rushed to his head and he felt lightheaded. Apparently, the plane's engine speed did not build up sufficient flow to make the cabin uncomfortable. In fact, Bridgeman stated that it was necessary to heat the cabin. Outside temperatures varied from about -35 to -57 deg. F. It was noted that the Skyrocket cabin is pressurized to maintain 35,000 ft altitude with the plane flying in a "vacuum."

Also planned during the interview, Skyrocket's wing can withstand over 10G.

• Glide ratio, with power off, is about 14:1.

• At extreme altitudes, the rocket motor flow is approximately one-eighth full time's D-555 T's length.

• There is a noticeable resistance by firing the speed ring. For example, during one climb, Bridgeman thought he was pushing over at 55,000 ft, color tracked him as going over at 38,000.

• The Skyrocket has not yet been taken off the ground ring, just the test vehicle. Also, the rocket-powered models will not get off the ground using just the jet. Kato has been used for several tests.

• Some additional fat was found necessary to improve stability characteristics.

• An indication of the Skyrocket's sag golden was graphically provided when the wings left landing gear on one of the planes. Indeed, on the Skyrocket. Only about a foot of the wingtip was damaged. The plane was repaired and ready to fly the next day.

• Physical checkup of pilot tests a year has been found adequate.

NACA Reports

• Method for Calculating Downwash Field Due to Lifting Surfaces at Subsonic and Supersonic Speeds (TN 2544)—by Sidney M. Hennes.

Calculation of the downwash field at subsonic speeds is actually conducted on Prandtl's lifting-line theory. At supersonic speeds, the methods for calculating downwash utilize conical flow, potential doublets, vortices, and pressure doublets. The requirement for removal of these methods have been found generally difficult and the practice has been usually to use approximate methods based on lifting-line theory.

The present report and notes is included to facilitate comparisons for choosing (most) increased downwash field due to lifting surfaces at subsonic and supersonic speeds. The method is applied to derive formulas for downwash

due to uniformly loaded flat and rectangular wings of arbitrary thickness at these speeds.

These formulas can be used to obtain the downwash field on wings of arbitrary loading by means of convenient integral parts in an earlier work by the same author (NACA TN 1303, 1951).

An illustrative example is given as which formulas are derived for the rectangular wing of arbitrary spanwise and uniform loading and for linear chordwise variation in loading.

• Method of Successive Approximations for the Solution of Certain Problems in Aerodynamics (TM 1286)—by M. E. Sheth.

This note is a translation of a paper originally appearing in a Russian technical journal in 1949. It presents the approximate solution of some boundary layer theory problems. The method used by the author combines boundary-layer and successive-approximation methods.

Problems considered include the solution of the different equations, the boundary-layer equation for a flat plate in incompressible flow, fluid velocity and heat transfer in laminar boundary layer and cooling of a heated sphere.

• Some Theoretical Characteristics of Trapped-Wing in Supersonic Flow and a Comparison of Several Wing Flap Configurations (TN 2536)—by Robert O. Fildes.

This note reports a theoretical investigation made of a trapped wing with various flap. The aerodynamic expressions derived were lift and pitching moment due to angle of attack, and pitching and bending moments and moment due to roll. Equations given for derivatives of these factors imply when the reduced Mach has been a leading edge tip represents the leading edge, and the outboard Mach has been ahead of the side edge. In the case of a wing with aileron as the inner condition is sufficient. The derivatives are presented in chart form.

What might actually be considered a second part of this report deals with a comparison of lift due to flap deflection, and rolling effectiveness for types of flaps on various conditions.

The following characteristics were reached:

- Most favorable characteristics occur from the triangular wing or trailing-edge flap.
- Rolling effectiveness was maintained throughout the wing rounded by the half-delta tip flap with joint fair wing.
- The half-delta tip flap, point forward on trapped-wing, increases the effectiveness of roll at the higher values of the product of the Mach number, spanwise and the lift curve slope—DAA.



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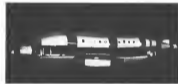
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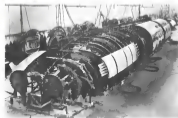


PRODUCTION

Trolley Ride Speeds Comet Production



CORNET FUNELAGE shown in train composition. All these parts are fabricated on



STATIC RGS, and assembled components transferred to mobile jags on



RAIL SYSTEM of jg trailers. The only fixed jg on track B is which mobile jgs are loaded up with V-blocks and plates. On track C (D is double) fixed loading is made, again with V-blocks and plates. Track B carrier completed end to prevent lift.

Jigs carry components on track system along the factory floor.

Production of the Comet literally is a juggling act. De Havilland Aircraft Co., Ltd., is using a series of jg trailers on tracks to ease movement and assembly of the large components of this jetliner, line jg transport.

Details of the track and jg system recently were outlined as a paper on the planning and production methods used in construction of the Comet given by de Havilland's production director H. Fern before the Royal Aeronautical Society.

► **From Fixed to Movable**—One of the main purposes of the system is to keep the external part of the fuselage free from jg structure so that assemblies will have ready access to the walls.

To feed the track, a number of components are made in static jgs. These parts include the fuselage nose, forward section, wing through structure, pressure floor, fuselage sides, front and rear bulkheads, doors and tail cone.

Once the subassemblies forming the bulkheads of the fuselage are removed on the tracks, they are transported by the jg trailers to the various stations along the track to complete the open track for finishing the structure.

► **Alignment Scheme**—The factory floor is converted to a table. De Havilland's



COMET I WING bulkheads shown in the board and external panels, jg engine at take, powerplant railings. Inland panel is built on fixed jg (top photo p. 41).




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FIXED JIG is loaded over job for rivets alone. Fuel is then transferred to



DRILL JIG for order series where and of 747 close tolerance holes for wing attachment holes are drilled. The jig is designed to insure complete interchangeability, and accuracy in angles of attachment, checked, machine

technicians aren't concerned with the accuracy of the flow in the hole it covers. Actually, the accuracy and duration of this large area depends upon the alignment of a number of V blocks and small flat surface stops.

The jig trusses also are fitted with V-blocks and surface pins for mating to those fixed blocks and plate stops located at strategic spots along the production line flow. A single screwdriver engagement on the wheel of each truss facilitates the connection of the mobile unit to the fixed portions built into the floor, so that the seat, slats,

pressure dome and other parts can be properly controlled for mating to the corresponding component on the jig trusses.

► **Wing.** Webb-Wing fabricating truck is similar to the fuselage truck. The jig fits the ribbed panel (bulk wing) in place, but when this unit is withdrawn from the jig and put on the truck or cart, it is taken to the various stations for such operations as drilling lay at, ribband in, fastener attachment, or engine cowling, cowlings, doors, or engine, jet pipe cowlings, and landing edge, flap and slats.



This picture does not equal 10,000 words

There is a fine photograph—but man and machines are only part of the story at IOW. It takes spirit de corps (a much overworked term that fits here)—and takes pride of workmanship to produce fine precision gears and parts.

► This bracketed jig drive is typical of the high precision tools designed and built by Indiana Gear for their own use.



INDIANA GEARS

AF Contracts

Unaffiliated Air Force aircrafts totaling over 50 million were announced by the Air Force for the week ended July 5. How much more than 35 million the contracts were worth is not known, as 23 awards were listed merely as "over \$10,000." The partial alphabetical list follows:

American Piston & Wing Co., St. Louis,

North Dakota, 21 AF contracts totaling \$10,000; North Dakota, 21 AF contracts totaling \$10,000; North Dakota, 21 AF contracts totaling \$10,000.

American Radiator & Standard Machine Co., Cincinnati, 21 AF contracts totaling \$10,000; American Radiator & Standard Machine Co., Cincinnati, 21 AF contracts totaling \$10,000.

Research & Development Co., Rochester, New York, 21 AF contracts totaling \$10,000; Research & Development Co., Rochester, New York, 21 AF contracts totaling \$10,000.

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load air cargo engines. He believes the conveyor will reduce the manpower needed to handle weighty objects and will make retrofit more efficient users of bulky objects such as aircraft engines and heavy machinery.

Pushbutton Switch

Reinforcement to its production of lightweight, screw, perforation switches has been announced by the Square D Co.

These pushbuttons are designed for use in aircraft systems such as fuel meter, turret control, communications and signal systems and for remote control of relays, solenoids and motors. They

are designed as capable of operating through a temperature range of -65 to 160 F and withstanding accelerations up to 35G (in any position). Switches can handle a 15 ampere inductive load, at 10v dc at 40,000 ft. altitude.

Models now in production are the two point, two terminal type, available with either normally closed or normally open contacts, and the three point, three terminal type furnished with normally open contacts. Identification data are provided under the label cap. Both models are available in a variety of size and mounting arrangements. Address: Square D Co., 6000 Ross St., Detroit 11, Mich.



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vaging. TWA master mechanic Jay Loopy, assigned welding the new sockets, two pieces together (lower left). Result is a reusable socket at engine change (lower right). Also TWA saves a lot of money and Loopy is a thousand dollars richer (before taxes).



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AIR TRANSPORT



CONTRACT FOR FIVE NWA Martin 240s is signed by CCA president, Col. C. C. Sherman, standing on the left, and NWA president, Col. H. B. Conner, CCA assistant director of operations, Robert W. Rinker, NWA assistant vice president-general

manager, Col. H. B. Conner, NWA president, Col. H. B. Conner, CCA assistant director of operations, Robert W. Rinker, NWA assistant vice president-general

CCA Switches to Postwar Planes

California intrastate operator converting fleet to former NWA 240-2s, now called Martinliner 300s.

By Thomas I. Del

California Central Airlines, the state's first operator who possessed its own fleet on the Los Angeles to San Francisco run, stands to stay out in front.

Beginning about Aug. 15, CCA will switch its equipment completely to "Martinliner 300s." The firm expects to have four of the five Martinliners (leased from the DCA) in service by Labor Day and the fifth soon after. The company already has taken delivery of four of the new ships and is completing them and training its pilots to fly them.

Col. C. C. Sherman, president of CCA, only recently closed the deal with

Norwest Airlines for the five planes, plus about \$180,000 in parts. To exchange CCA turned over five DC-3s and two DC-4s to NWA, plus an undivided amount of cash.

►Faster Service—The new equipment won't bring any change in fares or any immediate changes in schedules. But the faster speed of the Martinliners—up to 160 mph and 17 min. from Los Angeles to San Francisco, an hour faster than the DC-3—will enable the airline to boost schedules in traffic patterns. In the meantime, CCA will discontinue its five flights daily each way between San Francisco and Los Angeles and ten flights on Sundays plus three daily flights to San Diego.

The Martinliner purchase puts Sherwin in a stronger position to meet pressure from United, Western and other operators on the L.A.-S.F. run. They won't be able to replace present equipment for many years. And if they use DC-3s or other pre-war equipment, they'll have to divert it from back-haul class schedules.

United's president, W. A. Patterson, recently told Associated Press that "there is still a lot of cash on the L.A.-S.F. route," and expressed the company's reluctance to increase coach operations by curtailing fast-class fares.

►Tough Financing—Swinging the deal for the Martinliners took quite a bit of doing. Sherman and he had the same experience financially when he originally set up his company—the banks mysteriously backed out of the deal and he had to go to a "three-bell wire" to dig up the cash.

Sherman started thinking about the equipment exchange in November. He had been actively negotiating the deal with NWA for the past three months. The deal still has to be approved by NWA, but that is expected to be a formality. Arrangements were slow because everything had to be cleared with all 19 of the banks who participated in the \$11-million bank loan to NWA in 1949. No CCA approval is needed.

CCA will not change the fleetline and configuration of the Martinliners but its routes will fly with 44 seats. Modification will be made by knocking out the galleys and part of the middle compartment. CCA will install two rows across the cabin's front end.

►Fast History—Sherman is not worried about the past history of the Martinliners because he feels they were overvalued at NWA and there is another way to make more money. There will be no competition in California. Moreover, he is performing all the airworthiness functions on the ship plus the maintenance responsibilities of the Martin 240-Martinliner Branch.

CCA currently is putting its pilots through a \$75,000 training program to check them out on the Martinliners.

The Martin company, Sherman told Associated Press, is being very cooperative and "is treating us like a new customer." It has unit cost measures to ensure the maintenance. NWA has sent maintenance personnel and flight instructor people to help CCA make the change to the new planes.

►Schedules—The Martinliners will be placed on routes either out or two at a time. Each one will be flown for a day on CCA's principal routes—Los Angeles, Burbank, San Francisco, Oakland, San Diego. CCA will hold a party in each city to introduce the planes.

Sherman's assuming that DC-3s will be kept in spots as used as the Burbank flytime run. The Burbank-

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from 53 million lb. in 1949 to 52 million
lb. in 1950, says ATA.

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appears that Congress has experienced
considerably with its steel package, and
has already proved that the cutting rate
is as high as air mail postage can go
economically and efficiently."

A House bill only for lowering the
rate to 6 cents. At hearings early this
year, Postmaster General Jesse Dowdell
was opposed any increase in the rate.
Like ATA, he estimated any increase in
the rate would so reduce volume as to
set down total revenue.

WAL Operations Halt As Mechanics Strike

Western Air Lines operations were
suspended Friday, July 27, when pilots
and stewards refused to cross picket
lines set up by striking members of the
Air Carrier Mechanics Assn. Twenty
members of the Airline Dispatchers
Union also walked out. It was the com-
pany's first strike in 25 years.

Federal Mediator James Halloran was
trying to effect a settlement. The union
withdrew from negotiations Friday but
talked with Halloran again on Monday.
Both the mechanics union and the
Air Line Stewards and Dispatchers
Assn. are affiliated with the Air Line
Pilot Assn. Western is probably the
only airline doing exclusively with the
three affiliate unions.

The walkout of the mechanics fol-
lowed five months of negotiations be-
tween Western and the union. Previous
National Mediation Board action proved
unsuccessful and a 30-day "cooling
off" period, ordered under provisions of
the Railway Labor Act, expired July 8.

Deadlock—Negotiations with the me-
chanics were deadlocked principally over
the demand for a union shop with only
many shopwork and overtime of them.
The union also demands a "no-lay-
off" of work class. The mechanics want
the opportunity to work overtime
and double shift at an increased pay
rather than have the company and pay con-
siderable maintenance work to other
facilities.

But Western has made concessions
on 15 other demands of the union.
Western not only met the union's de-
mand for a 12-cent-an-hour raise the
last pay raise, but added an additional
5 cents an hour retroactive to Apr. 1.
It is now understood the union will
not retroactive pay to Jan. 1, when
the old contract ran out.

The day after the mechanics walked
out, Western signed a new contract
with the stewards union, which West-

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Profound experience and formal education desirable. However, applicants without formal education but with equivalent practical experience in aircraft engineering fields will be given consideration.

You are invited to investigate these opportunities by submitting a resume of your qualifications and references in as simple manner as you experience interest in which will be given prompt and serious consideration.

Address all correspondence to
Mr. C. G. Jones, Safety Personnel Department

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An Industry's Conscience

Just about five years ago, *Aerobics Week's* first issue appeared—July 7, 1947. In the past year as we have enjoyed several generations of new subscribers, our circulation has approached the 15,000 mark.

Some of these subscribers, taking only explanations on this page, write us their surprise at editorialism in an aviation magazine that once put out nothing wrong with things aviation.

On this fourth anniversary, we are putting down a few notes about *Aerobics Week's* editorial platform.

Editorial

First, aviation has a always meant to be constructive. We want aviation to progress. We have unbounded faith in aviation's future. But although this is an aviation business paper, we don't have the editorial attitude that everything about aviation is perfect, or that we defend industry whether it is right or wrong. We are the apologist for no group within industry, not for our own's full-timer. If we had wanted to "play it safe," *AW* would have discontinued its editorial page long ago, as some business magazines have done. But in that case we would always follow industry, seldom judge it forward, and never lead it.

The Platform

The crux of our editorial policy is to encourage the utmost development of aviation to serve safely and efficiently the most people at the lowest cost. We think this can be done only by private initiative in the free enterprise system.

The paragraph above covers military as well as commercial aspects of aviation. Today we refer mainly to commercial aviation.

Safety

Aerobics must strive vigorously, relentlessly, and forever, for greater safety. It is the top problem, always.

Subsidies

We are against any subsidies that can be avoided, or those that are not diminished as soon as the industry phase passes for any segment of the business. Subsidies should be reduced at the most rapid possible rate that good business methods and improving service will permit.

Competition

We favor competition in both manufacturing and transport. We shall always urge a free bidding to those who are in opportunity to do a better job at less cost. Monopolies in business should be allowed to have no monopolies in ideas. If someone can show they can set up a yardstick for the airlines, give them a curious trial, and let them do it if the Civil Guard refuses to improve its ways. Few companies or industries operate at maximum efficiency without competition or threat of it. Progress is made by those who are perpetually dissatisfied with the status quo. Aviation abhors the status quo as nature abhors a vacuum.

Because we believe this, we supported the air freight laws in their long fight for certification. We have supported a

trial for the non-aerial passenger carrier for airline routes. If any of them succeed in causing a hole for themselves, creating a new market and serving it, they should stay. So we have urged that none of the airlines be given a chance to buy new aircraft to flying is a new customer for all commercial aviation.

Government

Our attitude toward government—whether it be CAA, CAB, the Air Force, or the President of the United States—is that fundamentally government is the servant—not the master—of the people.

One of the obligations of the press is to reflect the will of the people. We have confidence in public opinion and in the intelligence of Americans. We hope to have few opportunities to bring to light any public servant who gets too big for his job and fails to remember his proper place in the scheme of things in this democracy. Let him not forget who pays him, and why. The people have a right to know, circumstances, and able across on the part of those in their government. They have a right to expect decisions based on public service, not on politics and self-interest. They furthermore have a right to know what their government is doing and how their money is being spent—except for the most secret work involving national defense.

Government Regulation

We are for all possible industry self-regulation and as little government control as possible. The more independent of government subsidy an industry is, the stronger can be its arguments for self-regulation. The better an industry's product is, the less excuse government has for taking over industry or any part of industry's job. In transportation, we believe CAA has done more to retard commercial aviation in the past few years than it has done to advance it. In manufacturing, trends toward more careful designing by government rather than industry have slowing possibilities.

Service & Lower Rates

Aviation cannot continue to have new persons lose out face transport, or persuade others to use aviation for business duty efficiency would not conduct at all, unless rates for all air services remain low in direct or indirect to other transportation. So we have little patience with those who seek to jack up rates in the public mind to pile profits on profits. The big profits will come, but only if aviation becomes more transportation.

So we have dashed away for maximum development of air coaches, because they decrease unnecessary bills and bring lower fares and more transportation that much easier.

Public Welfare First

Any industry that puts its own interests ahead of the public's is doomed to a sad ending. Sometimes the hard day comes quickly; sometimes it takes months in the background for years. But it always comes. So, we now *Aerobics Week* as more than a channel, analyst, teacher and missionary. Perhaps its editorial page can also be an industry's conscience.

—Robert H. Wood



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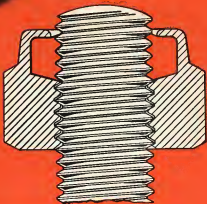
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